

A survey of the genus *Chonala* MOORE, 1893 with description of a new species (Lepidoptera, Nymphalidae, Satyrinae)

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Abstract: The characters of the genus *Chonala* MOORE, 1893 are summarized and all its species and subspecies known are reviewed on the basis of specimens recently collected. Their distribution is also clarified. The taxon *yunnana* LI, 1994 is raised to specific level and a new species, *Chonala irene* sp. n., is described; holotype male from China, Central Sichuan, Erlang Shan, in coll. Museum A. Koenig (Bonn, Germany). The imagos of all taxa are illustrated together with the male genitalia.

Ein Überblick über die Gattung *Chonala* MOORE, 1893 mit Beschreibung einer neuen Art (Lepidoptera, Nymphalidae, Satyrinae)

Zusammenfassung: Die Merkmale der Gattung *Chonala* MOORE, 1893 werden dargestellt. Alle bekannten Taxa werden auf der Basis rezent gesammelter Stücke vorgestellt, und ihre Verbreitung wird angegeben. Das Taxon *yunnana* LI, 1994 wird auf Artebene aufgestuft, und die neue Art *Chonala irene* sp. n. wird beschrieben; Holotypus ♂ von China, Zentralsichuan, Erlang Shan, in coll. Museum A. Koenig (Bonn). Die Imagines und die männlichen Genitalstrukturen aller Taxa werden abgebildet.

Introduction

Several surveys performed in Sichuan, Shaanxi and Yunnan provinces of China during the last ten years by entomologists from Japan, Russia and Italy have made available specimens of taxa which were previously little known or new to science. Among these taxa are the species belonging to the genus *Chonala* MOORE, 1893, all of them sharing a very short flying period and a very local distribution. The present paper has been made possible by the availability of this material.

Material and methods

Specimens examined in this paper are dried adults. The specimens are from the authors' collections and from the collections of A. FLORIANI, E. GALLO and V. SBORDONI.

For the observation of the genitalia, the distal part of the abdomen was macerated in 5% KOH solution and boiled for about 15', then washed with distilled water and put in 70% ethanol for dissection and observation.

The ♂ genitalia have not been flattened in order to preserve the complex shape of their components without any distortion. Their pictures have been taken through a Nikon SMZ1500 stereo microscope and subsequently elaborated with the Auto-Montage Pro software, by Synchroscopy (Cambridge, United Kingdom), that allows a clear depiction of the full 3-dimensional structure.

All the imago pictures have been taken with a Nikon D2X digital camera. The lighting system is the one introduced by W. ECKWEILER (Frankfurt am Main, Germany) (ECKWEILER 2001), based on a full spectrum fluorescent ring lamp.

Genus *Chonala*: diagnosis and distribution

Chonala MOORE, 1893, Lepidoptera Indica 2: 14.

Type species: *Debis masoni* ELWES, 1882.

Antennal club elongate. Wings broad, forewing with the costa much arched, hindwing ovate. In the forewing only the base of the subcostal vein is strongly swollen.

No perceptible androconial patch, but a few long black androconial scales are present among the ordinary one in some species.

Upper side dark brown with a yellow or white transversal band or series of spots on the forewing. Underside of hindwing with a complete series of submarginal pupillated black spots encircled by yellow-brown.

None or little sexual dimorphism. All taxa show very little individual variability.

♂ genitalia: valve simple, long, ended by a round head covered upwards with teeth, aedeagus with small lateral teeth.

The characters, both external and of the ♂ genitalia, are well defined and quite constant in all taxa. DE LESSE (1952) included in the genus *Chonala* the taxon *thibetana* OBERTHÜR, 1876 that, to the contrary, does not share many of the above characters.

All species are found in the area between E Himalaya, SE Tibet and SW China.

Description of the new species

Chonala irene sp. n.

Holotype: ♂, China, Central Sichuan, Erlang Shan, 2100 m, 11. vi. 2005, leg. A. FLORIANI, in coll. Museum A. Koenig (Bonn, Germany) (Figs. 8, 16).

Paratypes (in total 44 ♂♂): 2 ♂♂, same locality and data as holotype, coll. A. FLORIANI. 2 ♂♂, same locality, 22.–23. vi. 2005, coll. G. C. BOZANO; 12 ♂♂, same data, coll. E. GALLO; 13 ♂♂, same data, coll. C. DELLA BRUNA; 8 ♂♂, same data, coll. V. SBORDONI; 7 ♂♂, same data, coll. C. BELCASTRO.

Derivatio nominis: The species is dedicated to Mrs Irene FLORIANI, sister of Mr. Alessandro FLORIANI who first collected this new *Chonala*. The name is a noun in apposition.



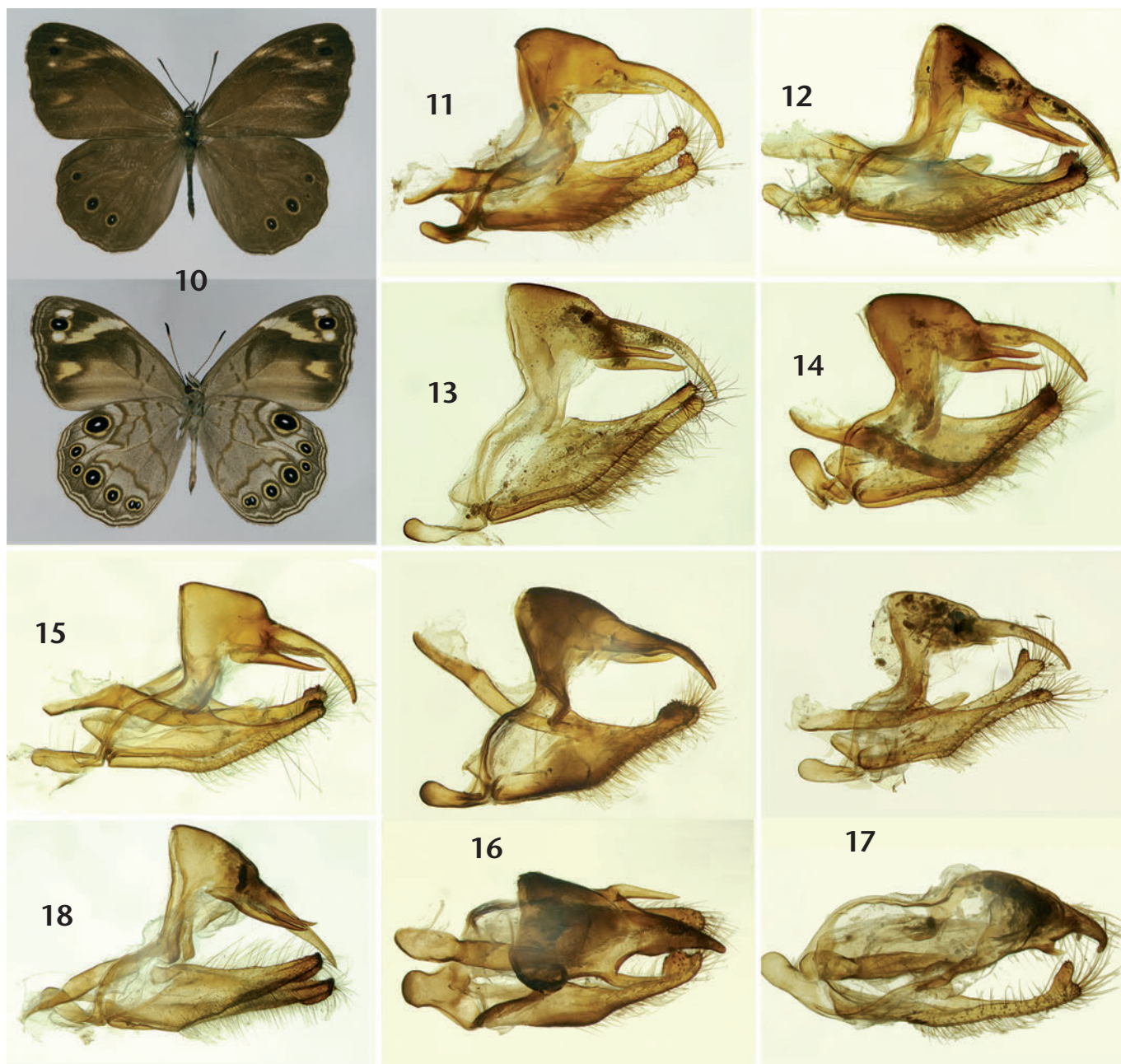


Fig. 1–10: *Chonala* specimens. Fig. 1: *C. masoni* ♂, S Tibet, Yadong, 3800 m, vii. 1981. Fig. 2: *C. episcopalis* ♂, W Sichuan, Kangding, 3000 m, 24. vii. 2003. Fig. 3: *C. praeusta praeusta* ♂, N Yunnan, Deqen, Mekong valley, 3000 m, 20. vii. 2000. Fig. 4: *C. praeusta praeusta* ♀, N Yunnan, Li-kiang, 3. ix. 1935. Fig. 5: *C. praeusta burmana* ♂, N Yunnan, Zhongdian, 2900 m, 4. viii. 2002. Fig. 6: *C. yunnana* ♂, N Yunnan, Tuguancun, 3100 m, Zhongdian, 27. vii. 2000. Fig. 7: *C. yunnana* ♀, same locality, 5. viii. 2002. Fig. 8: *C. irene* ♂, Holotype. Fig. 9: *C. laurae* ♂, Shaanxi, Qin Ling, 1800 m, 160 km S of Xi'an, 10. vii. 1981. Fig. 10: *C. miyatai* ♂, N Sichuan, Pingwu, 1. vii. 2005. — Fig. 11–18: *Chonala*, ♂ genitalia. Fig. 11: *C. masoni*, S Tibet, Yadong, 3800 m, vii. 1981. Fig. 12: *C. episcopalis*, W Sichuan, Tegu, 130 km NW of Kangding, vii. 1992. Fig. 13: *C. praeusta praeusta*, N Yunnan, Li-kiang, 31. vii. 1935. Fig. 14: *C. praeusta burmana*, N Yunnan, Zhongdian, 2900 m, 4. viii. 2002. Fig. 15: *C. yunnana*, N Yunnan, Tuguancun, 3100 m, Zhongdian, 27. vii. 2000. Fig. 16: *C. irene*, Holotype (lateral and dorsal view). Fig. 17: *C. laurae*, Shaanxi, Qin Ling, 1800 m, 160 km S of Xi'an, 10. vii. 2000 (lateral and dorsal view). Fig. 18: *C. miyatai*, N Sichuan, Pingwu, 1. vii. 2005.

Description

♂ (Fig. 8): Length of forewing 28.2 mm in the holotype, from 27.3 to 30.1 in the paratypes; wingspan 49.5 mm in the holotype, from 47.3 to 53.5 mm in the paratypes.

Upperside: ground color brown. Forewing brown, darker towards the apex and the outer margin. Postdiscal band orange-yellow, broken in space 4. Two apical yellowish spots surmount a pupillated black ocellus red-brown ringed. Hindwing with four black submarginal ocelli in spaces 2, 3, 4 and 5: the ocelli are marked on their

inner by a white pupil and circled with orange-brown. Androconial patch absent, but some androconial scales present in the upper central area of the forewing. Underside: forewing with an apical pupillated ocellus circled with yellow and surmounted by two white spots; yellow postdiscal band continuous and extending along the wing margin to space 1; the band is very dilated proximally in space 2; discal area red with a yellow tinge in the center. Hindwing ground colour grey; six black submarginal ocelli, the one in space 1 bi-pupilled; basal, discal and postdiscal brown lines are present. Antenna

slender, only slightly swollen toward apex, white ringed ventrally. Eyes hairy. Palpi densely covered with bristly hairs, white at the base and marked black distally.

♂ **genitalia** (Fig. 16): In the general appearance the genitalia are very similar to those of the other species of the genus. The main difference is in the shape of the distal part of the valve: in lateral view is large and inflated with some small teeth along the upper edge; in dorsal view it is largely spatulate inwards.

♀: unknown.

Distribution

At present known only from the type locality.

Remarks

In the general appearance ♂♂ of this new species are very similar to those of *C. praeusta*, but they are easily distinguishable in having four evident ocelli on the hindwing upper side and a pupilled black ocellus at the apex of the upper forewing. Also the brown postdiscal line in the under hindwing is different, being not as zigzagged as it is in *C. praeusta*.

Taxa survey of the genus

Chonala masoni (ELWES, 1882) (Figs. 1, 11)

Debis (Tansima) masoni ELWES, 1882, Proceedings of the Zoological Society of London 1882: 405, pl. 25 fig. 2. — Type material not checked.

Type locality: "... interior of Sikkim to the eastward ... probably in Bhotan or the Chumbi Valley."

Diagnostic characters: upper forewing with a large postdiscal white band; upper hindwing without submarginal ocelli and with outer angle bordered and fringed white; under forewing ground colour brown-grey; uncus long and arched; ♀ similar to ♂.

Range: according to the few existing records, it seems to be found only in Sikkim, S Tibet (Yadong) and probably W Bhutan; flying period unknown.

Chonala episcopalis (OBERTHÜR, 1885) (Figs. 2, 12)

Pararge episcopalis OBERTHÜR, 1885, Bulletin de la Société entomologique de France, Paris, 1885: 227. — Type material not checked.

Type locality: "Ta-tzien-lou" = Kangding, W Sichuan, China.

Diagnostic characters: upper forewing with a thin, irregular postdiscal whitish band and one or two white submarginal pupils at wing apex; under forewing ground colour brick-red; upper hindwing without submarginal ocelli; ♀ upperside ground colour brown-red with a red suffusion in the discal area of the forewing.

Range: W Sichuan from Kangding up to ca. 130 km NW of it; flying period end of July–August.

Chonala praeusta (LEECH, 1890)

Chonala praeusta praeusta (LEECH, 1890) (Figs. 3, 4, 13)

Pararge praeusta LEECH, 1890, The Entomologist 23: 188.

— Type material not checked.

Type locality: "Wa-Shan" = Yingjing, S of Ya'an, S Sichuan, China.

Diagnostic characters: upper forewing with a postdiscal fulvous-yellow band strongly angled between space 3 and space 4 and broken at space 3 and with two yellow submarginal spots at wing apex; under forewing ground colour brick-red; upper hindwing without submarginal ocelli; ♀ similar to ♂.

Range: S Sichuan, N Yunnan; flying period end of July–August.

Chonala praeusta burmana (TYTLER, 1939) (Figs. 5, 14)

Pararge praeusta burmana TYTLER, 1939, Journal of the Bombay Natural History Society 41: 246. — Type material not checked.

Type locality: Hthawgaw, NE Burma.

Diagnostic characters: larger, upper forewing fulvous yellow postdiscal band broader and not broken in space 3; under hindwing darker than in nominal *praeusta*. As already stated by TYTLER in the original description, we have found that specimens from the Zhongdian area, N Yunnan, show the characters of subspecies *burmana*, while in the Deqen area the specimens are closer to nominal *praeusta*.

Range: NE Burma, N Yunnan.

Chonala yunnana LI, 1994 stat. n. (Figs. 6, 7, 15)

Chonala episcopalis yunnana LI, 1994, in: CHOU (1994), Monographia Rhopalocerorum Sinensium 2: 757. — Type material not checked.

Type locality: Zhongdian, Yunnan, China.

Diagnostic characters: upper forewing with a large, continuous postdiscal yellow band, angled between space 3 and space 4 and with one or two small white submarginal pupils at wing apex; under forewing ground colour brick-red; upper hindwing without submarginal ocelli; ♀ upper forewing with a red suffusion in the discal area. *C. yunnana* is very different from *C. episcopalis* and it is easily distinguishable from *C. praeusta burmana*: the postdiscal band is larger, less indented and light yellow instead of orange-yellow; the two apical spots are small and white while they are large and yellow in *C. praeusta*.

Range: Zhongdian area in N Yunnan; flying period end of July–August.

Chonala irene sp. n. (Figs. 8, 16)

Diagnostic characters: pupillated black ocellus evident at fore wing apex; upper hindwing with a series of four submarginal pupillated ocelli, ringed fulvous-brown (found elsewhere only in *C. miyatai* and vestigial in *C. laurae*); ♀ unknown.

Range: Erlang Shan in W Sichuan; flying period June.

Chonala laurae BOZANO, 1999 (Figs. 9, 17)

Chonala laurae BOZANO, 1999, Guide to the Butterflies of the Palearctic Region 1: 20. — Type material (including holo-

type) examined.

Type locality: Qin Ling, Shaanxi, China, 33°25'45" N, 108°26'00" E.

Diagnostic characters: upper forewing with a thin and faint yellow band and with two yellow submarginal spots at wing apex; under forewing with a U-shaped horizontal submarginal yellow spot in space 2; upper hindwing with vestigial submarginal ocelli; male genitalia with very short subunci; female unknown.

Range: S Qin Ling mountains in Shaanxi, known only from the type locality; flying period July.

***Chonala miyatai* (Koiwaya, 1996) (Figs. 10, 18)**

Pararge miyatai KOIWAYA, 1996, Studies of Chinese Butterflies 3: 240. — Type material not checked.

Type locality: Daba Shan, N Sichuan, China.

Diagnostic characters: upper forewing with a thin and faint whitish band and with an elongate white submarginal spot at wing apex (sometimes an additional small spot is present), ground colour grey-brown; under forewing with a wedge-shaped submarginal dull yellow spot in space 2; upper hindwing with three well developed

submarginal ocelli (in some specimens one is vestigial); under hindwing with a discal dark line almost straight (the discal dark markings are strongly curved in all other species); male genitalia with uncus straight; ♀ similar to ♂.

Range: Daba Shan in N Sichuan, China; flying period end of June, beginning of July.

Acknowledgements

We are grateful to E. GALLO (Genova, Italy) for his helpful suggestions and for revising the manuscript.

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Received: 1. II. 2006

Entomologische Notiz

Aufruf zur Mithilfe: Gesucht werden Daten zur Blauschwarzen (oder Großen) Holzbiene *Xylocopa violacea* (L.) in Hessen und Deutschland (Hymenoptera, Apidae)

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Wer hilft mit? Gesucht werden Beobachtungs- beziehungsweise Funddaten der Blauschwarzen (oder Großen) Holzbiene *Xylocopa violacea* (L.) aus den letzten 10 Jahren (oder auch früher). Die Blauschwarze Holzbiene ist eine der wenigen Bienenarten (Hautflügler oder Hymenoptera, Apidae), die von jedem Naturbeobachter sicher erkannt werden kann.

Die Blauschwarze Holzbiene ist vom zeitigen Frühjahr bis in den warmen Herbst hinein zu beobachten. Sie ist etwas größer als eine Hummelkönigin, aber nicht farbig wie diese, sondern völlig blauviolett-schwarz glänzend mit dunklen Flügeln und geringer Behaarung, und wirkt weniger rund als eine Hummel, sondern

eher dorsoventral abgeplattet. Sie nistet in Totholz jeglicher Art (Balkenpfosten, Äste und Stämme von [Obst-]Bäumen) in sonnen-exponierten Lagen, besonders gerne im Siedlungsbereich (Streuobstwiesen, Gärten, Parkanlagen). Hier kann man sie im Frühjahr bei der Paarung und im Frühsommer bis in den Hochsommer hinein bei der Brutversorgung an den ca. 11 mm großen Eingangslöchern beobachten. Im Spätsommer erscheinen die Bienen der neuen Generation oft an den Nistplätzen bei der Suche eines Winterquartiers und beim Sonnenbaden. Auch beim Blütenbesuch wird die Blauschwarze Holzbiene häufig beobachtet. Sie bevorzugt großblütige Schmetterlingsblütler und Lippenblütler (Fabaceae beziehungsweise Lamiaceae): Im Frühjahr häufig an Glycinie (*Wisteria sinensis*) oder Goldregen (*Laburnum*), im Sommer mit Vorliebe an der Gartenplatterbse (*Lathyrus latifolia*), an Blüten von Bohnen und Erbsen, an Roten und Weißen Taubnesseln (*Lamium*) oder Gartensalbei (*Salvia officinalis*). Im Nachbarbundesland Rheinland-Pfalz wird die Holzbiene als gefährdet eingestuft (RL 3), deutschlandweit ist sie eine Art der Vorwarnliste.

Wer Beobachtungen beisteuern kann, möge sich bitte wenden an die obige Anschrift. Alle Beobachtungen sind wertvoll! (Bitte dabei angeben: Beobachter/-in mit Adresse, E-Mail, Telefonnummer wegen Rückrufs, Beobachtungsort, Datum, Angabe, was die Holzbiene gemacht hat, wie viele Tage wurde sie beobachtet, etc.) Wenn es längere Zeit her ist, genügt auch die (ungefähre) Jahreszahl der Beobachtung. Wichtig ist die präzise Ortsangabe (Gemeinde und Gemarkung beziehungsweise Ortsteil), wenn möglich auch eine Höhenangabe (m ü.NN.).

Eingang: 25. III. 2006



Xylocopa violacea (LINNAEUS, 1758) (Skizze).